

**ATTACHMENT 1
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
REGARDING LICENSE AMENDMENT REQUEST TO ADOPT NFPA 805
PERFORMANCE-BASED STANDARD FOR FIRE PROTECTION FOR
LIGHT WATER REACTORS**

NRC REQUEST

PRA RAI 01.j.01.01

By letter dated August 14, 2014 (ADAMS Accession No. ML14226A498), the response to PRA RAI 01.j.01 states that several 480V motor control centers (MCCs) do not postulate damage beyond the ignition source given that the MCCs are considered by the licensee to be well-sealed and robustly secured. Note that with respect to this issue, new guidance is being developed in draft FAQ 14-0009 to provide clarification of NUREG/CR-6850, "EPRI/NRC-RES Fire PRA Methodology for Assessing Software Quality" guidance on well-sealed and robustly secured cabinets housing circuits with voltages of greater than 440V. Relevant NRC Staff comments are provided in "NRC Comments on MCC Treatment White Paper August 29, 2014" (Comments) (ADAMS Accession number ML14245A133). The NRC comments support the use of a value of 0.1 to characterize the likelihood that such a fire can breach a well-sealed MCC cabinet and damage all cables within 6" from the top of the cabinet. While the NRC staff acknowledges that this guidance is considered draft, it may be used to determine the acceptability of transition risk.

- i) Describe how fires breaching well-sealed cabinets are modelled consistent with current draft guidance; and,*
- ii) Provide updated aggregate NFPA-805 Transition PRA results (currently summarized in the response to RAI 30) including fires that breach well-sealed cabinets. NFPA-805 Transition PRA results include total fire CDF and LERF, and Δ CDF and Δ LERF associated with transition. Confirm this update will be in the Fire PRA model to be used for self approval (i.e., implementation item).*

ENO RESPONSE

- i) Based on the current draft guidance [1], scenarios originating within motor control centers (MCCs) with a voltage 440V or greater were updated to consider damage beyond the MCC with a 0.1 conditional probability. These scenarios also considered immediate damage to targets within 6" from the top of the cabinet. Further modeling of fire propagation and damage was done using existing models. No reevaluation of the phenomenological fire modeling was performed for MCCs where all cables are located higher than 6" above the cabinet. These MCCs were analyzed with the same 0.1*

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conditional probability. Scenarios that did not consider damage beyond the MCC were updated to include a severity factor of 0.9.

References

1. "NRC Comments on MCC Treatment White Paper August 29, 2014" (Comments) (ADAMS Accession number ML14245A133)
- ii) Updated aggregate NFPA-805 Transition PRA results that include fires that breach well-sealed cabinets are provided below. The treatment of the potential for fire damage external to well-sealed cabinets that complies with current guidance will be included in the Fire PRA model to be used for self-approval. See the revised Attachment S, Table S-3, Item 3 provided in Attachment 2.

The updated Δ CDF and Δ LERF results indicate a net decrease in CDF and LERF. Therefore, the change in risk satisfies RG 1.174.

Also included below is the impact on overall baseline risk using NUREG/CR-6850 ignition frequencies per Footnote 10 of Supplement 1. The updated results do not exceed the RG 1.174 risk acceptance guidelines when included in the summation in Table PRA RAI 20.01-1. Therefore, the overall baseline risk satisfies RG 1.174.

Table PRA RAI 01.j.01.01-1: NFPA 805 Transition PRA Results

	Fire CDF / LERF	Fire Δ CDF / Δ LERF
Fire Area Total	4.4E-05 / 3.8E-06	-2.6E-04 / -1.5E-05
Multi-Compartment Analysis	1.8E-07 / 3.4E-08	
Post-Transition Plant	4.4E-05 / 3.8E-06	
Post-Transition Plant^(*)	5.1E-05 / 4.8E-06	

^(*)Using NUREG/CR-6850 Original Fire Frequencies per Footnote 10 of Supplement 1

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PRA RAI 30.01

The response to PRA RAI 30 suggests that weaknesses associated with the Fire Probabilistic Risk Assessment (FPRA) HRA dependency analysis, namely PRA RAIs 01.h and 03 regarding updating the dependency analysis and PRA RAI 01.h.01 regarding its treatment of location, have not been incorporated in FPRA or the updated Attachment W results provided as Attachment 4 to the letter dated August 14, 2014.

- i) Are the updated dependency and location evaluations included in the updated Attachment W?*
- ii) If not, indicate whether incorporating the updated evaluations might cause the RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" acceptance guidelines to be exceeded and provide confidence (e.g., with an updated Implementation Item 3) that these evaluations will be completed before using the PRA to support self-approval.*

ENO RESPONSE

- i) The Attachment W results do not address the updated dependency and location evaluations.**
- ii) Attachment S, Table S-3, Item 3 has been expanded to include incorporation of the updated dependency and location evaluations into the FPRA. This update will be in the Fire PRA model to be used for self approval. See the revised Attachment S, Table S-3, Item 3 provided in Attachment 2.**

NRC REQUEST

PRA RAI 30.a.01

The response to PRA RAI 30 states that the FPRA model to be used at the beginning of the self-approval of post-transition changes "would exclude modifications not implemented at the time". Noting that all PRA-credited implementation items and modifications must be completed prior to use of the FPRA model for self-approval, clarify this statement.

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ENO RESPONSE

ENO understands that all PRA-credited implementation items and modifications must be completed prior to the use of the FPRA model for self-approval.

NRC REQUEST

PRA RAI 30.c.01

With respect to PRA RAI 30 and Attachment W:

- a. Confirm that the updated Attachment W results provided in Attachment 4 to the letter dated August 14, 2014 reflect all the revisions to VFDRs and recovery actions identified in Attachment 2 to the same letter.*
- b. The revised Attachment W, Table W-2, provides negative Δ CDF and Δ LERF Transition risk. Implementation Item 8 indicates that the final risk estimates that will be developed after all modifications and method changes associated with transition are completed will be assessed against these negative values instead of the RG 1.174 acceptable risk increase guidelines. RG 1.174 acceptance guidelines may also be used. If changes to the proposed language in Implementation Item 8 are desired to reflect this, please provide updated proposed language for Implementation Item 8.*

ENO RESPONSE

- a. The updated Attachment W results provided in Attachment 4 to the letter dated August 14, 2014 reflects the revisions to VFDRs and recovery actions identified in Attachment 2 to the letter dated August 14, 2014.
- b. ENO has revised Attachment S, Table S-3, Item 8 to update the language to reference the RG 1.174 acceptance guidelines. See the revised Attachment S, Table S-3, Item 8 provided in Attachment 2.